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10/618,857	07/15/2003	Taekyun Kim	1033808-004	6991

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BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
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EXAMINER	
YUAN, KATHLEEN S	

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
11/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/618,857	KIM ET AL.	
	Examiner	Art Unit	
	KATHLEEN S. YUAN	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-17,19-27 and 29-37* is/are rejected.

7)☒ Claim(s) *9,18,28,38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The response received on 10/7/2008 has been placed in the file and was considered by the examiner. An action on the merit follows.

Summary of Arguments and Examiner's Response:

1. The applicant makes only arguments regarding the previous rejection. The arguments are refuted below:

2. *The applicant argues that the 112 rejections are improper because the claims are clear. "The applicants reiterate that the office action may be confusing breadth with clarity," (page 2, paragraph 2) and that by not defining images in the claim as the same or different, the images can either be the same or different.*

3. The examiner argues that by not clearly defining the breadth of what the images are, (including in the arguments the concept that by not defining the images, that they can either be different images or the same images), the claim is still indefinite, and does not distinctly claim the subject matter that the applicant regards as his invention. The applicant is free to claim a larger breadth (such as stating that the training images are the same or different images from the firstly claimed training images) or a smaller breadth (by referring to the training images the second time around as "said/ the training images"; however, the applicant must clearly define what the applicant is claiming, and by stating that the breadth of the claim can be either interpretation, the applicant is not clearly defining the claim. The rejection still stands.

4. *The applicant summarizes the all examiner's rejections on page 3 of the arguments, then begins to argue the Zhao reference as not defining a second PCA algorithm, only that Zhao teaches concatenation of the local eigenvectors.*

5. The examiner did not state that the concatenation refers to the second PCA algorithm of the claim. The examiner stated that the vector synthesis refers to the concatenation, since the local eigenvectors are concatenated, and thus synthesized into one vector (see page 4 of the non-final rejection dated 7/7/2008). Zhao teaches the second PCA algorithm when finding the projection vector (again, see page 4 of the non-final rejection dated 7/7/2008).

6. The applicant continues to outline the examiner's citations to the claim in pages 5-8. Then on page 9, the applicant argues that the office action "may be misinterpreting the present claims. For instance, claim 10 recites a first LDA transformation algorithm. This first LDA transformation algorithm is determined based on training images. However, as far as the undersigned can tell, the algorithm of Zhao is not determined based on training images. The mosaic image method of Zhao is said to slice an image into equal small dimensional mosaic images and local eigenvectors are generated by counting for the local correlation between these small mosaic images. Global eigenvectors are formed by these local eigenvectors according to the relative position of the mosaic images. PCA is applied to each mosaic such that eigenvectors can be computed, according to page 1424, second full paragraph. These mosaic eigenvectors are concatenated to result in principle components for the whole image. However, in comparing the recitations regarding the second LDA transformation, as with the first

LDA transformation, one cannot see that the Zhao reference discloses a second LDA transformation algorithm that is determined based on training images. In fact, as captioned in the table above, a projection vector global representations data are applied locally and globally the input image (after subtracting the mean image from it) is sliced into mosaic images in the same way in which a new representation is generated and the projection vector of the image is therefore equation 6 as appears on page 1424. Again, one cannot see a correlation between the cited passages of the Zhao article and the recitations of claim 10."

7. The examiner points to pages 7-10, section 5, where image recognition occurs. N sample images are used in the training stage, and s eigenimages are used in the recognition stage; all of the images undergo the PCA process. Therefore, taking the broadest interpretation of the claim, the PCA transformations are determined based on training images since one of the input images is a training image, and since it undergoes PCA transformation, the resulting transformation is based on the training image (as the claim requires..."a first LDA transformation unit for LDA transforming the divided facial components into component descriptors of the facial components using a first LDA transformation determined based on training images", except Zhao does not teach expressly the LDA limitation that is later addressed in the 103 rejection). The applicant is not clear as to where the first and second transformation occurs. The first transformation is the PCA transformation of taking each of the small mosaic images (that were found in the previous step) and finding the principle component to each of these small images (page 3, paragraph 4 "Local eigenvectors are generated by

accounting for the local correlation in these small mosaic images"). The second transformation is the transformation of finding the projection vector through a PCA process, therefore, a PCA transformation. This is done on query images and on training images, thus the transformation is based on training images (page 8, paragraph 1). Hopefully this clarifies to the applicant further what the first/second transformation is.

8. *The applicant argues that in the Baudat reference, "the selection of GDA and LDA can only be based on an attempt to meet the claim recitations by using the claims as a template to selectively extract feature from the prior art in order to meet the claim recitations. (pages 10-11 of arguments)."*

9. The selection of GDA and LDA is supported by the suggestion/ motivations provided in the previous rejection. There is a motivation to combine the references, to one of ordinary skill in the art. Therefore, the selection of GDA and LDA are obvious, AND meet the claim recitation. Furthermore, KSR vs. Teleflex co. dictates that simple substitution of one known, equivalent element for another to obtain predictable results is obvious. GDA and LDA are both known, and simply substituting the known, equivalent element for another would obtain a predictable result, an extracted GDA vector instead of an extracted LDA vector for use in recognition. Since both methods are used as component analysis recognition, it would be obvious to one of ordinary skill in the art use one method instead of the other.

10. *The applicant further argues on page 11, that Kouzani does not show the image overlapping, and that Zhao does not accommodate overlapping images.*

11. Kouzani discloses that the image regions overlap, as can be seen in fig. 2, where the eye regions overlap the nose region. Zhao accommodates dividing an image into pieces and taking each piece to find a PCA component. Kouzani shows a way in which the image can be divided, with individual facial regions that overlap. Zhao certainly accommodates finding different components from different regions of the images, but uses a different image division than Kouzani. Kouzani was added to show another known way to divide images into regions. Therefore, the image regions of Kouzani are accommodated by Zhao, in which the image regions of Kouzani overlap.

12. *The applicant further argues that it is not clear why Erdogan et al "would provide a teaching that would result in 'the most accurate LDA recognition by being able to find the relationship between the model images and the input image' any better than Zhao et al already discloses if one were to accept the substitution of the LDA for PCA in accordance with the Examiner's suggestion." (pages 11-12 of the arguments)*

13. The direct finding of the relationship between the model images and input images allows a more accurate recognition since the process illustrates a direct relationship, being more straightforward and allowing less room for error. However, if the applicant is unsatisfied by the motivation provided, it is further noted that KSR vs. Teleflex Co dictates that it is obvious to combine references when applying a known technique to a known device, method or product ready for improvement to yield predictable results. The LDA recognition system of using transformation is a known method for LDA. Therefore, applying this known technique to a known LDA device would yield the predictable result of having the transformation results be akin with matrix calculations.

Itwould have been obvious to one of ordinary skill in the art to apply the technique of using transformation matrixes in the LDA of Zhao (as modified by Belhumeur) to improve the LDA transformation by determining further the relationship between the images with a more detailed model. Furthermore, KSR vs. Teleflex dictates that it would be a combination of references would be obvious if it is "ovious to try." Zhao (as modified by Belhumeur) discloses using the LDA transformation as claimed. Erdogan et al discloses a solution of using LDA is by using the disclosed transformation matrix. Thus, it would have been obvious to a person of ordinary skill in the art to try the matrix of Erdogan et al to provide a means of using the LDA transformation as in Zhao (as modified by Belhumeur), as a person with ordinary skill has good reason to pursue the known options within his or her technical grasp. In turn, because the claimed in invention has properties predicted by the prior art, it would have been obvious to use the known solution of using the particular LDA transformation matrix of Erdogan with the LDA transformation of Zhao (as modified by Belhumeur).

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 1-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16. Claims 1, 10, 19 and 29 recite the limitation of "training images" twice throughout the claim. It is unclear if the first set of training images correspond to the second set of training images. Furthermore, no connection is made between the face images stored in a face image DB to the training images, leading the claims to read as all being separate images. The applicant discloses in the specification that the face image DB images are used as the training images. Please keep terms consistent.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 10, 11, 12, 14, 17, 29, 30, 33, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Mosaic image method: a local and global method" (Zhao et al) in view in view of Eigenfaces vs. Fisherfaces: Recognition Using Class Specific Linear Projection (Belhumeur et al).

Regarding claim 29, Zhao et al discloses a method comprising the steps of: dividing an input image (for training) into components by dividing an image into small mosaic images (page 3, paragraph 4); PCA transforming the divided facial components

into component descriptors of the components by calculating local eigenvectors for the mosaic images (page 3, paragraph 4) using an PCA transformation algorithm determined based on training images, since the transformation to obtain the model from training occurs on sample images (page 7, paragraph 5); synthesizing the transformed component descriptors into a single vector by calculating a global eigenvector (page 3, paragraph 4 and page 4, eq. 4); PCA transforming the single vector into a single face descriptor when trying to recognize an image by finding the projection vector (page 4, paragraph 6), using a PCA transformation algorithm determined based on training images, since the projection vector provides information on the objects/ training images (page 7, paragraph 5); and determining similarities between an input query face image and face images stored in a face image DB by comparing a face descriptor of the input query face image with face descriptors of the face images stored in the face image DB by comparing the new image and the models (page 8, paragraph 2).

Zhao et al does not disclose expressly that the transformation units are LDA, and that the image that is used is a facial image, thus making all the image steps related to a facial image.

Belhumeur et al discloses that it is well known to use PCA and LDA for facial images, disclosing the word "fisherface" for LDA and "eigenface" for PCA (title, page 2, paragraph 2). Belhumeur et al also compares LDA versus PCA, finding LDA is an appropriate method in place of PCA (page 1, paragraph 5-page 2, paragraph 2).

Zhao et al and Belhumeur et al are combinable because they are from the same field of endeavor, i.e. pattern recognition.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use LDA instead of PCA and to use recognition for facial recognition.

The suggestion/motivation for doing so would have been a more robust system by providing an optimal method from a discrimination standpoint (page 2, paragraph 1) which provides less errors in cases with lighting variation, facial expression, and presence of glasses (page 8, paragraph 2).

Therefore, it would have been obvious to combine the recognition method of Zhao et al with the facial LDA recognition of Belhumeur to obtain the invention as specified in claim 29.

19. Regarding claim 30, Zhao et al discloses the step of PCA transforming the divided components comprises the steps of: PCA transforming the divided components into component descriptors of the components, transforming them into local eigenvectors (page 3, paragraph 4); and vector normalizing the transformed component descriptors into a one-dimensional vector by subtracting the mean and getting the 1 dimensional vector shown in eq. 6 (page 4, paragraph 6). Belhumeur et al discloses the images are facial images (title, page 2, paragraph 2), and using LDA instead of PCA (page 1, paragraph 5-page 2, paragraph 2).

20. Regarding claim 33, Zhao et al discloses comparing of the input query face image with the face images of the image DB, or model images that have been previously processed, is performed by comparing the face descriptor of the input query face image with the face descriptors of the face images stored in the image DB (page 8, paragraph 2).

21. Regarding claim 36, Zhao et al discloses that the step of determining similarities comprises the steps of: extracting first images, a group of model images that were first processed, and second images, a second group of model images that are processed as more model images are input (page 8, paragraph 2); and determining similarities between the input, a third image that is input as the process continues to input faces, a second set of query images and the face images of the image DB using the similarities between the input query face image and the second similar face images since all the images are compared (page 8, paragraph 2). Belhumeur et al discloses the images are facial images (title, page 2, paragraph 2), so therefore, the first images, second images, and input query face are all similar to each other because the images are all of a face.

22. Regarding claim 37, Zhao et al discloses the step determining similarities comprises: a first similarity determination step of determining similarities between the input query face image and the face images of the image DB, the model images (paragraph 8, page 2); the first similar face image extraction step of extracting the first similar face images in an order of similarities according to results of the first similarity determination step by finding the model image that reaches the smallest distance (page 9, paragraph 3); the second similarity determination step of determining similarities between the first similar face images and the face images of the image DB when repeating the process for a new face image (page 8, page 2); and the second similar face image extraction step of extracting the second similar face images for each of the first similar face images in an order of similarities according to results of the second

similarity determination step when the repeated process continues (page 8, paragraph 2).

23. Claim 10 is rejected for the same reasons as claim 29. Thus, the arguments analogous to that presented above for claim 29 are equally applicable to claim 10. Claim 10 distinguishes from claim 29 only in that claim 10 is an apparatus claim and claim 29 is a method claim. It is inherent if not obvious that a method must use an apparatus in order to carry out the method. In an apparatus, units that carry out the functions described are the units of each of the steps. Therefore, prior art applies.

24. Claims 11 and 17 are rejected for the same reasons as claims 30 and 36, respectively. Thus, the arguments analogous to that presented above for claims 30 and 36 are equally applicable to claims 11 and 17. Claims 11 and 17 distinguish from claims 30 and 36 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

25. Regarding claim 12, Zhao et al discloses PCA transformation and vector normalization are each provided for the divided components since the full image undergoes transformation and normalization (page 4, paragraph 6). Belhumeur et al discloses the images are facial images (title, page 2, paragraph 2), and using LDA instead of PCA (page 1, paragraph 5-page 2, paragraph 2). In an apparatus, the units that carry out the functions described are the units of each of the steps.

26. Claim 14 is rejected for the same reasons as claim 33. Thus, the arguments analogous to that presented above for claim 33 are equally applicable to claim 14. Claim 14 distinguishes from claim 33 only in that they have different dependencies and

claim 14 claims that the image databases stores the descriptors of images. Since the dependencies have been previously rejected, and since Zhao et al discloses that previously processed model images are compared to the input, which therefore must be stored (page 8, paragraph 2), prior art applies.

27. Claims 1, 2, 3, 5, 8, 19, 20, 23, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al in view of Belhumeur et al as applied to claims 10 and 29 above, and further in view of "Generalized Discriminant Analysis using a Kernel Approach" (Baudat).

Regarding claim 19, Zhao et al (as modified by Belhumeur et al) discloses all of the claimed elements as set forth above and incorporated herein by reference.

Claim 19 is rejected for the same reasons as claim 29. Thus, the arguments analogous to that presented above for claim 29 are equally applicable to claim 19. Claim 29 distinguishes from claim 19 only in that claim 29 uses GDA instead of LDA.

Zhao et al (as modified by Belhumeur et al) does not disclose expressly using GDA.

Baudat discloses using GDA as a means to carry out LDA (page 1, paragraph 1).

Zhao et al (as modified by Belhumeur et al) and Baudat are combinable because they are from the same field of endeavor, i.e. recognition processes using discriminant analysis.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use GDA instead of LDA.

The suggestion/motivation for doing so would have been to provide a more robust method for non-linear problems.

Therefore, it would have been obvious to combine the method of Zhao et al (as modified by Belhumeur et al) with Baudat to obtain the invention as specified in claim 19.

28. Claim 1 is rejected for the same reasons as claim 19. Thus, the arguments analogous to that presented above for claim 19 are equally applicable to claim 1. Claim 1 distinguishes from claim 19 only in that claim 1 is an apparatus claim and claim 19 is a method claim. It is inherent if not obvious that a method must use an apparatus in order to carry out the method. In an apparatus, units that carry out the functions described are the units of each of the steps. Therefore, prior art applies.

29. Claims 2, 3, 5, 8, 20, 23, 26, and 27 are rejected for the same reasons as claims 11, 12, 14, 17, 30, 33, 36, and 37, respectively. Thus, the arguments analogous to that presented above for claims 11, 12, 14, 17, 30, 33, 36, and 37 are equally applicable to claims 2, 3, 5, 8, 20, 23, 26, and 27. Claims 2, 3, 5, 8, 20, 23, 26, and 27 distinguish from claims 11, 12, 14, 17, 30, 33, 36, and 37 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

30. Claims 15, 16, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al in view of Belhumeur et al, as applied to claims 10 and 29 above, and further in view of "Multiresolution Eigenface-Components" (Kouzani et al).

Regarding claim 15, Zhao et al (as modified by Belhumeur et al) discloses all of the claimed elements as set forth above and incorporated herein by reference.

Zhao et al (as modified by Belhumeur et al) does not disclose expressly the divided face components are partially overlapped with each other.

Kouzani et al discloses a different way of dividing face images, in different features, which partially overlap each other (fig. 2).

Zhao et al (as modified by Belhumeur et al) and Kouzani et al are combinable because they are from the same field of endeavor, i.e. facial recognition.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to partially overlap the images.

The suggestion/motivation for doing so would have been to provide a more accurate recognition by providing full information for each feature.

Therefore, it would have been obvious to combine the apparatus of Zhao et al (as modified by Belhumeur et al) with the partial overlapping of Kouzani et al to obtain the invention as specified in claim 15.

31. Regarding claim 16, Kouzani et al discloses that the face components into which the input face image is divided comprises eyes, a nose and a mouth (fig. 2).

32. Claims 34 and 35 are rejected for the same reasons as claims 15 and 16, respectively. Thus, the arguments analogous to that presented above for claims 15 and 16 are equally applicable to claims 34 and 35. Claims 15 and 16 distinguish from claims 34 and 35 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

33. Claims 6, 7, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al in view of Belhumeur and Baudat, as applied to claims 1 and 19 above, and further in view of Kouzani et al.

Claims 6, 7, 24 and 25 are rejected for the same reasons as claims 15, 16, 34 and 35, respectively. Thus, the arguments analogous to that presented above for claims 15, 16, 34 and 35 are equally applicable to claims 6, 7, 24 and 25. Claims 15, 16, 34 and 35 distinguish from claims 6, 7, 24 and 25 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

34. Claims 13 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al in view of Belhumeur et al, and further in view U.S. Patent No. 6567771 (Erdogan et al).

Regarding claim 13, Zhao et al (as modified by Belhumeur et al) discloses all of the claimed elements as set forth above and incorporated herein by reference.

Zhao et al (as modified by Belhumeur et al) does not disclose expressly a transformation matrix/transformation coefficient DB for storing a transformation matrix or transformation coefficients calculated by training the face images stored in the image DB, wherein the first LDA transformation unit or the second LDA transformation unit performs LDA transformation using the stored transformation matrix or transformation coefficients.

Erdogan et al discloses that it is well known that when training a pattern recognition system, during LDA processes, a number of matrices are determined and used to determine a transformation matrix (col. 5, lines 39-47). This must be stored somewhere, in order for use later when the matrix is used to reduce the dimensions of a feature vector (col. 5, lines 47-49). Reducing the feature vector is part of the second LDA process, since it is reducing the feature vector of an input image; thus, the transformation matrix is used in the second LDA process.

Zhao et al (as modified by Belhumeur et al) and Erdogan et al are combinable because they are from the same field of endeavor, i.e. recognition using LDA.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the transformation matrix.

The suggestion/motivation for doing so would have been to provide the most accurate LDA recognition by being able to find the relationship between the model images and the input image.

Therefore, it would have been obvious to combine Zhao et al (as modified by Belhumeur et al) with the transformation matrix of Erdogan et al to obtain the invention as specified in claim 13.

35. Regarding claim 31, Erdogan et al discloses that the LDA transforming is carried out using a transformation matrix or a transformation coefficient calculated by training the face images stored in the image DB (col. 5, lines 37-49).

36. Claims 4 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al in view of Belhumeur et al and Baudat, and further in view Erdogan et al.

Claims 4 and 21 are rejected for the same reasons as claims 13 and 31, respectively. Thus, the arguments analogous to that presented above for claims 13 and 31 are equally applicable to claims 4 and 21. Claims 4 and 21 distinguish from claims 13 and 31 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

37. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al in view of Belhumeur et al, and further in view of U.S. Patent Application Publication No. 20040066953 (Bock).

Zhao et al (as modified by Belhumeur et al) discloses all of the claimed elements as set forth above and incorporated herein by reference.

Zhao et al (as modified by Belhumeur et al) does not disclose expressly the step of outputting the face images of the image DB retrieved based on the determined similarities.

Bock discloses outputting face images of the identified face person (page 1, paragraph 0005).

Zhao et al (as modified by Belhumeur et al) and Bock are combinable because they are from the same field of endeavor, i.e. facial recognition.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the recognized face image.

The suggestion/motivation for doing so would have been to provide a more user-friendly system that would allow the information processed to be viewed by someone who wanted to know the result.

Therefore, it would have been obvious to combine Zhao et al (as modified by Belhumeur et al) with the output of Bock to obtain the invention as specified in claim 32.

38. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhao et al in view of Belhumeur et al and Baudat, and further in view of Bock.

Claim 22 is rejected for the same reasons as claim 32. Thus, the arguments analogous to that presented above for claim 32 are equally applicable to claim 22. Claim 22 distinguishes from claim 32 only in that they have different dependencies, both of which have been previously rejected. Therefore, prior art applies.

Allowable Subject Matter

39. Claims 9, 18, 28 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

40. Claims 9, 18, 28 and 38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

41. Claims 9, 18, 28 and 38 are allowable because of the reasoning disclosed in the previous office action.

Conclusion

42. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHLEEN S. YUAN whose telephone number is (571)272-2902. The examiner can normally be reached on Monday to Thursdays, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571)272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jingge Wu/
Supervisory Patent Examiner, Art Unit 2624

KY
11/10/2008